

REMARKS

Prior to entry of this response, claims 78 - 147 are pending in this application. Claims 78, 89, 92, 96, 97, 108, 118, 121, 125, 126, 136, 138, and 142 - 147 are amended herein. No new matter has been added by these amendments. Claim 102 is canceled herein, without prejudice or disclaimer. After entry of this response, claims 78 - 101 and 103 - 147 are pending in this application.

In the Office Action, the Examiner reconsidered and withdrew the restriction requirement set forth in the October 7, 2003, Office Action. The Examiner also rejected claims 78 - 81, 83 - 86, 88 - 94, 108 - 111, 113 - 115, 117 - 123, 126 - 129, 131 - 133, 135 - 140, and 143 - 147 under 35 U.S.C. § 103(a) as being unpatentable over *Klemmer* in view of *Saueressig*, EP 181726, and *Kildune*, rejected claims 82, 112, and 130 under 35 U.S.C. § 103(a) as being unpatentable over *Klemmer* in view of the prior art as applied to claims 78, 108, and 126, and further in view of *Bulson*, rejected claims 87, 116, and 134 under 35 U.S.C. § 103(a) as being unpatentable over *Klemmer* in view of the prior art as applied to claims 78, 108, and 126, and further in view of *Jones*, rejected claims 95, 96, 124, 125, 141, and 142 under 35 U.S.C. § 103(a) as being unpatentable over *Klemmer* in view of the prior art as applied to claims 78, 108, and 126, and further in view of *Julian*, rejected claims 97 - 99 and 102 - 107 under 35 U.S.C. § 103(a) as being unpatentable over *Klemmer* in view of the prior art as applied to claims 78 - 81, 83, and 84, and further in view of *Hoage et al.*, rejected claim 100 under 35 U.S.C. § 103(a) as being unpatentable over *Klemmer* in view of the prior art as applied to claim 97, and further in view of *Jones*, and rejected claim 101 under 35

U.S.C. § 103(a) as being unpatentable over *Klemmer* in view of the prior art as applied to claim 97, and further in view of *Bulson*. Applicants respectfully traverse the Examiner's rejections.

Each of the independent claims of the present application, as amended, recites an elongated sleeve formed of a material having a hardness of less than 40 P&J and having a thickness in the range of about 0.025" to about 0.500", and a structure for communicating pressurized air at a pressure of at least about 100 p.s.i. to about 300 p.s.i. to the outer surface of the core to form an air cushion or air curtain between the sleeve and the core. Specifically, the elongated sleeve recited in the claims is provided for embossing a web material. As such, the sleeve material has a high hardness of less than 40 P&J to accommodate the high pressures associated with an embossing process. Moreover, a substantial thickness is required in the sleeve material, in this case in the range of about 0.025" to about 0.500", to accommodate an embossing pattern being engraved on the sleeve. Because of the hardness and thickness of the sleeve material, high pressure air is needed to form an air cushion to expand the sleeve and allow movement of the sleeve along the core. None of the cited prior art, either alone or in combination, discloses or suggests this structure.

In rejecting the claims in the Office Action, the Examiner argues that *Klemmer* discloses using a releasably attached sleeve with an engraved embossing pattern thereon on an embossing roller having a rigid core so as to facilitate replacement of the engraved sleeve without having to remove the entire embossing roller from the machine. The Examiner admits that *Klemmer* fails to disclose releasably attaching the sleeve to the roll by using pressurized gas, but argues that *Saueressig* cures this

deficiency. *Saueressig*, according to the Examiner, "teaches the structure and method of employing a printing roller sleeve positioning means for releasably attaching a printing sleeve 3 onto a roller core 2 using pressurized gas as recited." The Examiner also admits that none of the prior art discloses or suggests providing an elongated sleeve having a hardness of less than 40 P&J. To overcome this deficiency, however, the Examiner argues that *Kildune* discloses that it is conventional to provide an embossing roller core with a vulcanized rubber sleeve. Specifically, the Examiner argues that "since the applied prior art references use the same material (vulcanized rubber), it would appear that the broad hardness range as recited would inherently be met. Besides, due to the lack of disclosure showing any criticality, the hardness of the embossing sleeve employed would be determined based upon the type of material to be embossed, etc. and such a determination would be made by those having ordinary skill in the art." The Examiner's arguments fail for at least the following reasons.

First, the Examiner has failed to establish a *prima facie* case of obviousness. In order to establish such a *prima facie* case, the Examiner must demonstrate, among other things, (1) that the prior art references teach or suggest every element of the claims; and (2) some suggestion or motivation in the references or in the knowledge generally available to those of ordinary skill in the art to modify or combine reference teachings. M.P.E.P. § 2143. This, the Examiner has not done, as he has not pointed to any suggestion or motivation in the art to modify or combine the teachings of the cited references. *Klemmer* and *Kildune* are directed towards embossing rolls. *Saueressig* and EP '726, on the other hand, are directed towards printing rolls. Because of the different objectives sought, printing and embossing are very different arts. As noted in

responses to prior Office Actions, the specification of the present application makes clear that the pressure involved in embossing is greater than that encountered in printing, and therefore presents different problems. For example, page 5 of the specification as filed, states that "with printing processes, the printing roll lightly contacts the sheet being printed and the fibers of the material being printed are preferably not damaged. However, with embossing processes, the embossing elements press into the material intentionally breaking and working the fiber bonds of the material." In addition, in an embossing process, the profile of the embossing element is important as it forms a three-dimensional structure on the web as it breaks the web fibers. In printing, on the other hand, the printing roll merely transfers a thin film of ink to the web. The Examiner has not established why one skilled in the embossing art would look to the printing art for a solution to problems in the embossing art.

Second, Applicants disagree that the cited prior art would lead a skilled artisan to use sleeve materials having a hardness of less than 40 P&J. Specifically, Applicants submit that *Kildune* fails to teach or suggest using vulcanized rubber as an embossing sleeve material to one of ordinary skill in the art. First, *Kildune* fails to disclose a sleeve that is used for embossing. Instead, *Kildune* discloses a method of making a mold of hardened material, which is not vulcanized rubber, that is then inverted and used to form a pattern on an embossing roll. Thus, *Kildune* discloses a mold, not a sleeve. Moreover, the ability to invert the mold makes the mold inappropriate for use as a sleeve, as it will not withstand the pressures encountered in an embossing process. Second, *Kildune* teaches away from using vulcanized rubber. Specifically, the cited portion of *Kildune* that refers to vulcanized rubber discusses and distinguishes itself as

superior to U.S. Patent No. 4,634,484 to *Wagner*. As noted by *Kildune*, while *Wagner* teaches forming a sleeve out of a vulcanized silicon rubber, "since the embossing roll [in *Wagner*] is a composite, as opposed to a unitary roll in which the embossing indicia is integral and unitary with the external surface of roll, there is a danger of slippage of the sleeve along the underlying surface which can seriously impact production quality and efficiency." *Kildune* then goes on to teach that, in their invention, it is preferable to use "a sleeve 8 of a hardenable and imprintable material. This imprintable material is in the nature of what is commonly referred to as modeling clay but more accurately is a plastic molding compound."

Thus, contrary to the Examiner's assertion, *Kildune* not only does not fairly suggest to one of ordinary skill in the art that a vulcanized rubber is preferably used in the context of the invention, but teaches that vulcanized rubber is not preferable for use as an embossing sleeve in the described invention and, in addition, fails to even disclose an embossing sleeve. Thus the Examiner has not shown why one of ordinary skill in the art would be motivated from the teachings of *Kildune* to use a vulcanized rubber sleeve. Neither *Klemmer* nor EP '726 mention what the sleeve material is made of, or even what the sleeve material's hardness may be.

Furthermore, *Saueressig* explicitly teaches a sleeve material hardness outside of the claimed range. As explained in the August 26, 2003, Preliminary Amendment, the sleeve material disclosed in *Saueressig*, having a Shore hardness between 70 and 110, is softer than a material having a P&J hardness of less than 40. The claims recite that the sleeve hardness be less than 40 P&J. Therefore, *Saueressig* clearly does not disclose a material with a hardness inside the claimed range.

Therefore, the Examiner's conclusion, "since the applied prior art references use the same material (vulcanized rubber), it would appear that the broad hardness range as recited would inherently be met," is flatly incorrect. As each of the claim recite an elongated sleeve material having a hardness of less than 40 P&J, and as none of the cited references teaches or suggests this element, the Examiner has not established a *prima facie* case of obviousness.

Third, regarding the cited air pressure, the Examiner admits that *Klemmer*, as modified by the applied art, does not teach the air pressure range recited. Yet the Examiner alleges that *Hoage* teaches "that it is known to apply high air pressure in the range of 125 psi - 250 psi or higher for mounting printing sleeves onto printing cylinders based on the particular material and the thickness of the sleeves used." Applicants disagree that *Hoage*, when read as a whole, fairly suggests to those skilled in the art using an air pressure of at least about 100 p.s.i. to 300 p.s.i., as claimed herein.

The cited portion of *Hoage* discusses the *Julian* reference and U.S. Patent No. 4,144,812, also to *Julian et al.* Neither of these references, however, teaches or suggests "an extremely high air pressure, in excess of 125 psi, and typically about 250 psi or higher" as suggested by *Hoage*. In fact, neither of the *Julian* references even so much as mentions any specific air pressure at all, much less an air pressure of at least about 100 p.s.i. to about 300 p.s.i. In addition, *Hoage* teaches using a low pressure fluid "typically introduced at a pressure, at ambient temperature, of not more than about 100 psi, preferably not more than about 80 psi, and more preferably not more than about 50 psi." Further, *Hoage* also indicates that *Julian* discloses that the thickness of the sleeve is about 0.015". While, in fact, *Julian* fails to disclose any thickness

dimensions for an expandable sleeve, the thickness and pressure allegations made in *Hoage* would lead one of ordinary skill to understand that air pressures substantially higher than 250 p.s.i. would be required to provide an air cushion for a sleeve having a thickness in the range of about 0.025" to about 0.500". Thus, given the disclosure in *Hoage*, one of ordinary skill in the art would clearly not be motivated to apply these supposed teachings to a sleeve having thicknesses in the range of about 0.025" to about 0.500".

The Examiner has not established why, given this disclosure in *Hoage*, one of ordinary skill in the art would be led to combine a pressure of at least about 100 p.s.i. to about 300 p.s.i. with the teachings of the other cited references. If anything, one of ordinary skill would instead, based upon the teachings of *Hoage* as whole, be led away from using pressures equal to or higher than about 100 p.s.i. A reference that teaches away from the embodiments of the invention cannot be said to make that invention obvious, as references must be considered as a whole, "including portions that would lead away from the claimed inventions." M.P.E.P. § 2141.02. Therefore, the Examiner has not established a *prima facie* case of obviousness based upon the cited references in view of *Hoage*.

In addition to the above, none of the cited references teach or suggest any structure capable of creating a high pressure air cushion. Specifically, the present invention, unlike the prior art, provides a structure, see Figures 2 and 4, which allows a high pressure air cushion to be developed all the way around the core. This completely circumferential high pressure air cushion allows mounting and dismounting of the thicker, harder embossing sleeves. None of the cited references teaches or suggests

that these thicker, harder materials can be sufficiently expanded to allow loading and unloading of the sleeves. For at least these reasons, the Examiner has failed to establish a *prima facie* case of obviousness.

Thus, for at least the above reasons, independent claims 78, 97, 108, 126, and 143 - 147, as well as those claims that depend therefrom, are allowable.

In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account 06-0916.

Respectfully submitted,

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